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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,767

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Thomas Brandt

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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER

FLOHRE, JASON A

ART UNIT

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2622

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/533,767	Applicant(s) BRANDT ET AL.	
	Examiner JASON FLOHRE	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 1-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/06/2005 05/04/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19, 24-27 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Lamprecht (United States Patent 5,875,018).

Regarding claim 19 Lamprecht discloses a recording device for image recording having a recording unit (cameras 5 and 6 mounted on a helmet exhibited in figure 1 as disclosed at column 4 lines 59-60), having a sensor device for detecting eye movements of the user (CCD cameras 1 and 2, exhibited in figure 1, detect eye movement as disclosed at column 4 lines 53-55) and an analysis unit (figure 1 exhibits evaluation device 3 which supplies information regarding a user's eye position as disclosed at column 4 lines 55-58), connected downstream from the sensor unit (figure 1 exhibits evaluation device 3 being downstream from the sensor unit), which generates control signals that are applied to an actuator acting on the recording unit, through which the image section detected by the recording unit is movable (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the user's eye as disclosed at column 4 lines 65-67), wherein the sensor device detects pitching, yawing, and rolling movements of at least one eye of the user and the analysis unit analyzes the detected eye movements and generates control signals therefrom,

Art Unit: 2622

which cause the actuator to move the image section detected by the recording unit so it follows the detected and analyzed eye movements (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the user's eye as disclosed at column 4 lines 65-67. "Any change in the angle of vision" would include roll, pitch and yaw movements).

Regarding claim 24, Lamprecht discloses everything claimed as applied above (see claim 19), in addition, Lamprecht discloses wherein a projection device for projecting the images recorded by the recording unit in the viewing field of the user (the image is projected by projection devices 9 or 10 on screen 12 which is placed before the user's eye as disclosed at column 5 lines 7-9).

Regarding claim 25, Lamprecht discloses everything claimed as applied above (see claim 19), in addition Lamprecht discloses whose recording unit has at least one optical camera (cameras 5 and 6 exhibited in figure 1 as disclosed at column 4 lines 59-60).

Regarding claim 26, Lamprecht discloses everything claimed as applied above (see claim 19), in addition, Lamprecht discloses wherein the recording unit has a mount rotatable around 3 spatial axes (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the user's eye as disclosed at column 4 lines 65-67. "Any change in the angle of vision" would include all 3 spatial axes).

Regarding claim 27, Lamprecht discloses everything claimed as applied above (see claim 19), in addition, Lamprecht discloses wherein a sensor device is assigned to

Art Unit: 2622

each eye of the user (CCD cameras 1 and 2 one of which is assigned to each eye as, exhibited in figure 1, detect eye movement as disclosed at column 4 lines 53-55).

Regarding claim 30 Lamprecht discloses a method for controlling a recording device, in which the eye movements of a user wearing the recording device are detected by a sensor device (eye movements are continuously detected as disclosed at column 5 lines 16-17) and analyzed by an analysis unit (evaluation unit 3 determines the actual position of the optical axes of both eyes) and in which an image section detected by a recording unit is moved with the aid of an actuator acting on the recording unit (cameras 5 and 6 constantly follow eye movement by use of adjusting devices 7 and 8 as disclosed at column 5 lines 22-24), wherein pitching, yawing, and rolling movements of an eye of the user are detected by the sensor device, the detected movements are analyzed by the analysis unit and the image section of the recording unit is moved so it follows the detected and analyzed movements of the eye (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the user's eye as disclosed at column 4 lines 65-67. "Any change in the angle of vision" would include roll, pitch and yaw movements).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2622

Claims 20, 21, 31, 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamprecht (United States Patent 5,875,018) in view of Smyth (United States Patent 5,583,795).

Regarding claim 20, Lamprecht discloses everything claimed as applied above (see claim 19), however, Lamprecht fails to disclose wherein the analysis unit analyzes voluntary and involuntary eye movements performed by the user.

However, in a similar field of endeavor Smyth discloses an apparatus for measuring eye gaze. In addition Smyth discloses wherein the analysis unit analyzes voluntary and involuntary eye movements performed by the user (column 8 lines 58-67 disclose classifying eye movement as fixations, which are later grouped into voluntary meaning gaze movements, and saccadic movements, which are involuntary movement).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Lamprecht by specifically providing wherein the analysis unit analyzes voluntary and involuntary eye movements performed by the user, as taught by Smyth, for the purpose of reducing blur in the captured image by not using eye movements too fast to be accurately repeated by an actuator.

Regarding claim 21, Lamprecht discloses everything claimed as applied above (see claim 19), however, Lamprecht fails to disclose wherein the analysis unit has an intrasaccadic suppression device, which suppresses reproduction of the images recorded by the recording unit if the velocity of the eye movement of the user exceeds a predefined limiting value.

Art Unit: 2622

However, Smyth discloses wherein the analysis unit has an intrasaccadic suppression device, which suppresses reproduction of the images recorded by the recording unit if the velocity of the eye movement of the user exceeds a predefined limiting value (column 14 lines 36-40 disclose classifying all movements above a velocity as saccadic. Column 8 lines 60-65 disclose using only the fixations to determine gaze movements. Therefore, while only saccadic movements are present the image would not change and the recorded image would be equivalent to a fixed image determined before the saccadic movements were present. By fixing the image and ignoring saccadic movements the device is suppressing reproduction of images which would be captured using saccadic movement).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing wherein the analysis unit has an intrasaccadic suppression device, which suppresses reproduction of the images recorded by the recording unit if the velocity of the eye movement of the user exceeds a predefined limiting value, as taught by Smyth, for the purpose of eliminating images which when reproduced would have too much blur to be useful.

Regarding claim 31, Lamprecht discloses everything claimed as applied above (see claim 30), however, Lamprecht fails to disclose wherein voluntary and involuntary movements of an eye of the user are detected and analyzed.

However, Smyth discloses wherein voluntary and involuntary movements of an eye of the user are detected and analyzed (column 8 lines 58-67 disclose classifying

Art Unit: 2622

eye movement as fixations, which are later grouped into voluntary meaning gaze movements, and saccadic movements, which are involuntary movement).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Lamprecht by specifically providing wherein voluntary and involuntary movements of an eye of the user are detected and analyzed, as taught by Smyth, for the purpose of reducing blur in the captured image by not using eye movements too fast to be accurately repeated by an actuator.

Regarding claim 32 Lamprecht discloses everything claimed as applied above (see claim 30), however, Lamprecht fails to disclose wherein the display of images recorded with the aid of the recording unit is suppressed in the event of movements whose velocity exceeds a predefined limiting value.

However, Smyth discloses wherein the display of images recorded with the aid of the recording unit is suppressed in the event of movements whose velocity exceeds a predefined limiting value (column 14 lines 36-40 disclose classifying all movements above a velocity as saccadic. Column 8 lines 60-65 disclose using only the fixations to determine gaze movements. Therefore, while only saccadic movements are present the image would not change and the recorded image would be equivalent to a fixed image determined before the saccadic movements were present. By fixing the image and ignoring saccadic movements the device is suppressing reproduction of images which would be captured using saccadic movement).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing wherein the

Art Unit: 2622

display of images recorded with the aid of the recording unit is suppressed in the event of movements whose velocity exceeds a predefined limiting value, as taught by Smyth, for the purpose of eliminating images which when reproduced would have too much blur to be useful.

Regarding claim 35 Lamprecht discloses a method for image recording, which comprises adjusting for movement associated with a user, using a recording device comprising: a recording unit (cameras 5 and 6 mounted on a helmet exhibited in figure 1 as disclosed at column 4 lines 59-60), having a sensor device for detecting eye movements of the user (CCD cameras 1 and 2, exhibited in figure 1, detect eye movement as disclosed at column 4 lines 53-55) and an analysis unit (figure 1 exhibits evaluation device 3 which supplies information regarding a user's eye position as disclosed at column 4 lines 55-58), connected downstream from the sensor unit (figure 1 exhibits evaluation device 3 being downstream from the sensor unit), which generates control signals that are applied to an actuator acting on the recording unit, through which the image section detected by the recording unit is movable (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the user's eye as disclosed at column 4 lines 65-67), wherein the sensor device detects pitching, yawing, and rolling movements of at least one eye of the user and the analysis unit analyzes the detected eye movements and generates control signals therefrom, which cause the actuator to move the image section detected by the recording unit so it follows the detected and analyzed eye movements (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the user's eye as

Art Unit: 2622

disclosed at column 4 lines 65-67. "Any change in the angle of vision" would include roll, pitch and yaw movements). However, Lamprecht fails to disclose wherein said recording device is used as a night-vision device.

However, Smyth discloses wherein said recording device is used as a night-vision device (column 22 lines 42-45 disclose using the device as night vision goggles).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing wherein said recording device is used as a night vision device, as taught by Smyth, for the purpose of allowing users to see scenes in the dark which would be equivalent to what they would see if the scene were properly illuminated.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lamprecht (United States Patent 5,875,018) in view of Stuttler (United States Patent 6,580,448).

Regarding claim 22, Lamprecht discloses everything claimed as applied above (see claim 19), however, Lamprecht fails to disclose whose sensor device has an infrared mirror positioned in the viewing field of the user and an infrared camera directed toward the mirror area of the infrared mirror.

However, in a similar field of endeavor Stuttler discloses a device for the parallel capture of visual information. In addition, Stuttler discloses whose sensor device has an infrared mirror positioned in the viewing field of the user and an infrared camera directed toward the mirror area of the infrared mirror (column 4 lines 46-49 disclose

Art Unit: 2622

positioning an infrared mirror in front of the eye and diverting the infrared image of the eye to an image sensor).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing whose sensor device has an infrared mirror positioned in the viewing field of the user and an infrared camera directed toward the mirror area of the infrared mirror, as taught by Stuttler, for the purpose of tracking eye movement without limiting the user's field of view.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lamprecht (United States Patent 5,875,018) in view of Witt et al. (United States Patent Application Publication 2003/0156742), hereinafter referenced as Witt.

Regarding claim 23, Lamprecht discloses everything claimed as applied above (see claim 19), however, Lamprecht fails to disclose whose sensor device comprises a contact lens provided with induction coils.

However, in a similar field of endeavor Witt discloses an eye tracking system. In addition, Witt discloses whose sensor device comprises a contact lens provided with induction coils (paragraph 15, lines 1-4 discloses a search coil method in which coils embedded in contact lenses are used to track eye movement).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing whose sensor device comprises a contact lens provided with induction coils, as taught by Witt, for the purpose of increasing the accuracy of the eye tracking system.

Claims 28 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamprecht (United States Patent 5,875,018) in view of Mann (United States Patent Application Publication 2002/0085843).

Regarding claim 28 Lamprecht discloses everything claimed as applied above (see claim 27), however, Lamprecht fails to disclose wherein the analysis unit analyzes the vergence position of the eyes of the user in order to generate an autofocus signal for the recording unit.

However, in a similar field of endeavor Mann discloses a wearable camera system. In addition Mann discloses wherein the analysis unit analyzes the vergence position of the eyes of the user in order to generate an autofocus signal for the recording unit (paragraph 124, lines 1-8 disclose using an autofocus camera which obtains a focus position based on the vergence of the wearer's eyes).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing wherein the analysis unit analyzes the vergence position of the eyes of the user in order to generate an autofocus signal for the recording unit, as taught by Mann, for the purpose of automatically focusing the camera on the same area that the user is focused on.

Regarding claim 33 Lamprecht discloses everything claimed as applied above (see claim 30), however, Lamprecht fails to disclose wherein the vergence position of both eyes of the user is analyzed and used for focusing the recording unit.

However, in a similar field of endeavor Mann discloses a wearable camera system. In addition Mann discloses wherein the vergence position of both eyes of the

Art Unit: 2622

user is analyzed and used for focusing the recording unit (paragraph 124, lines 1-8 disclose using an autofocus camera which obtains a focus position based on the vergence of the wearer's eyes).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing wherein the vergence position of both eyes of the user is analyzed and used for focusing the recording unit, as taught by Mann, for the purpose of automatically focusing the camera on the same area that the user is focused on.

Claims 29, 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamprecht (United States Patent 5,875,018) in view of Maguire (United States Patent 6,778,150).

Regarding claim 29 Lamprecht discloses everything claimed as applied above (see claim 27), in addition, Lamprecht discloses wherein a camera, is assigned to each eye of the user (Lamprecht discloses a camera 5 assigned to the leading eye and camera 6 assigned to the weaker eye as disclosed at column 5 lines 12-15). However Lamprecht fails to disclose which follows the movements of the respective eye.

However, in a similar field of endeavor Maguire discloses an apparatus for eye tracking. In addition Maguire discloses which follows the movements of the respective eye (column 4 lines 57-59 disclose the use of two eye coordinate systems. When combined with Lamprecht each coordinate system would be applied to its respective camera).

Art Unit: 2622

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing which follows the movements of the respective eye, as taught by Maguire, for the purpose of recording images which are identical to what the user sees.

Regarding claim 34 Lamprecht discloses a method for image recording, which comprises adjusting for movement associated with a user, using a recording device comprising: a recording unit (cameras 5 and 6 mounted on a helmet exhibited in figure 1 as disclosed at column 4 lines 59-60), having a sensor device for detecting eye movements of the user (CCD cameras 1 and 2, exhibited in figure 1, detect eye movement as disclosed at column 4 lines 53-55) and an analysis unit (figure 1 exhibits evaluation device 3 which supplies information regarding a user's eye position as disclosed at column 4 lines 55-58), connected downstream from the sensor unit (figure 1 exhibits evaluation device 3 being downstream from the sensor unit), which generates control signals that are applied to an actuator acting on the recording unit, through which the image section detected by the recording unit is movable (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the user's eye as disclosed at column 4 lines 65-67), wherein the sensor device detects pitching, yawing, and rolling movements of at least one eye of the user and the analysis unit analyzes the detected eye movements and generates control signals therefrom, which cause the actuator to move the image section detected by the recording unit so it follows the detected and analyzed eye movements (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the user's eye as

Art Unit: 2622

disclosed at column 4 lines 65-67. "Any change in the angle of vision" would include roll, pitch and yaw movements). However, Lamprecht fails to disclose wherein said recording device is used for recording films.

However, Maguire discloses wherein said recording device is used for recording films (column 8 lines 44-45 disclose transmitting the images for viewing by a passive viewer. The images viewed by the passive viewer are a film).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing wherein said recording device is used for recording films, as taught by Maguire, for the purpose of allowing remote viewers to experience the same scenes that the user experienced.

Regarding claim 36 Lamprecht discloses a method for image recording, which comprises adjusting for movement associated with a user, using a recording device comprising: a recording unit (cameras 5 and 6 mounted on a helmet exhibited in figure 1 as disclosed at column 4 lines 59-60), having a sensor device for detecting eye movements of the user (CCD cameras 1 and 2, exhibited in figure 1, detect eye movement as disclosed at column 4 lines 53-55) and an analysis unit (figure 1 exhibits evaluation device 3 which supplies information regarding a user's eye position as disclosed at column 4 lines 55-58), connected downstream from the sensor unit (figure 1 exhibits evaluation device 3 being downstream from the sensor unit), which generates control signals that are applied to an actuator acting on the recording unit, through which the image section detected by the recording unit is movable (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the

Art Unit: 2622

user's eye as disclosed at column 4 lines 65-67), wherein the sensor device detects pitching, yawing, and rolling movements of at least one eye of the user and the analysis unit analyzes the detected eye movements and generates control signals therefrom, which cause the actuator to move the image section detected by the recording unit so it follows the detected and analyzed eye movements (adjustment devices 7 and 8 move cameras 5 and 7 according to any change in the angle of vision of the user's eye as disclosed at column 4 lines 65-67. "Any change in the angle of vision" would include roll, pitch and yaw movements). However, Lamprecht fails to disclose wherein said recording device is used for monitoring the viewing direction of test subjects.

However, Maguire discloses wherein said recording device is used for monitoring the viewing direction of test subjects (column 8 lines 44-45 disclose transmitting the images for viewing by a passive viewer. The images viewed by the passive viewer would be a way to evaluate the viewing direction of the user. The fact that the user is a test subject would be a choice based on the parties using the device).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lamprecht by specifically providing wherein said recording device is used for monitoring the viewing direction of test subjects, as taught by Maguire, for the purpose of allowing remote viewers to evaluate what the user is seeing and to further train the user based on the information.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON FLOHRE whose telephone number is (571)270-

Art Unit: 2622

7238. The examiner can normally be reached on Monday to Thursday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 517-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAF/

/Sinh Tran/
Supervisory Patent Examiner, Art Unit 2622